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Application of transcription factor '

decoy' strategy as means of gene therapy and study

of gene expression in cardiovascular disease.

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Recent progress in molecular biology has provided new techniques for inhibiting target gene expression. In particular, the application of DNA technology, such as antisense strategy to regulate the transcription of disease-related genes in vivo, has important therapeutic potential.

Recently, transfection of cis-element double-stranded

oligodeoxynucleotides (ODNs), referred to as 'decoy' ODNs, has been reported to be a powerful tool in a new class of anti-gene

strategies

for gene therapy and in the study of transcriptional regulation. Transfection of double-stranded ODNs corresponding to the cis sequence will result in the attenuation of authentic cis-trans interaction,

leading to the removal of trans factors from the endogenous cis elements with subsequent modulation of gene expression. This 'decoy' strategy is not only a novel strategy for gene therapy as an anti- gene strategy but also a powerful tool for the study of endogenous gene regulation in vivo as well as in vitro. In this article, we reviewed (1) the mechanisms

and (2) the potential